



SEQUENCE LISTING

<110> Brooks, Alan R.
Deng, Gary G.
Rubanyi, Gabor M.
Schering Aktiengesellschaft

<120> Estrogen-Regulated Unconventional Myosin-Related
Protein: Compositions and Methods of Use

<130> 015303-000310US

<140> US 09/803,126

<141> 2001-03-09

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<151> 2000-03-10

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<170> PatentIn Ver. 2.1

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<210> 4
<211> 437
<212> PRT
<213> Homo sapiens

<220>
<223> Partial amino acid sequence of human myosin
related protein variant 1 (hMRP1)

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20 25 30
Leu Ala Lys Leu Gly Ile Asn Gly Ala His Ser Ser Pro Pro Met Leu
35 40 45
Ser Pro Ser Pro Gly Lys Gly Pro Pro Pro Ala Val Ala Pro Arg Pro
50 55 60
Lys Ala Pro Leu Gln Leu Gly Pro Ser Ser Ser Ile Lys Glu Lys Gln
65 70 75 80
Gly Pro Leu Leu Asp Leu Phe Gly Gln Lys Leu Pro Ile Ala His Thr
85 90 95
Pro Pro Pro Pro Pro Ala Pro Pro Leu Pro Leu Pro Glu Asp Pro Gly
100 105 110
Thr Leu Ser Ala Glu Arg Arg Cys Leu Thr Gln Pro Val Glu Asp Gln
115 120 125
Gly Val Ser Thr Gln Leu Leu Ala Pro Ser Gly Ser Val Cys Phe Ser
130 135 140
Tyr Thr Gly Thr Pro Trp Lys Leu Phe Leu Arg Lys Glu Val Phe Tyr
145 150 155 160
Pro Arg Glu Asn Phe Ser His Pro Tyr Tyr Leu Arg Leu Leu Cys Glu
165 170 175
Gln Ile Leu Arg Asp Thr Phe Ser Glu Ser Cys Ile Arg Ile Ser Gln
180 185 190
Asn Glu Arg Arg Lys Met Lys Asp Leu Leu Gly Gly Leu Glu Val Asp
195 200 205
Leu Asp Ser Leu Thr Thr Thr Glu Asp Ser Val Lys Lys Arg Ile Val
210 215 220
Val Ala Ala Arg Asp Asn Trp Ala Asn Tyr Phe Ser Arg Phe Phe Pro
225 230 235 240
Val Ser Gly Glu Ser Gly Ser Asp Val Gln Leu Leu Ala Val Ser His
245 250 255
Arg Gly Leu Arg Leu Leu Lys Val Thr Gln Gly Pro Gly Leu Arg Pro
260 265 270

Asp Gln Leu Lys Ile Leu Cys Ser Tyr Ser Phe Ala Glu Val Leu Gly
 275 280 285
 Val Glu Cys Arg Gly Gly Ser Thr Leu Glu Leu Ser Leu Lys Ser Glu
 290 295 300
 Gln Leu Val Leu His Thr Ala Arg Ala Arg Ala Ile Glu Ala Leu Val
 305 310 315 320
 Glu Leu Phe Leu Asn Glu Leu Lys Lys Asp Ser Gly Tyr Val Ile Ala
 325 330 335
 Leu Arg Ser Tyr Ile Thr Asp Asn Cys Ser Leu Leu Ser Phe His Arg
 340 345 350
 Gly Asp Leu Ile Lys Leu Leu Pro Val Ala Thr Leu Glu Pro Gly Trp
 355 360 365
 Gln Phe Gly Ser Ala Gly Gly Arg Ser Gly Leu Phe Pro Ala Asp Ile
 370 375 380
 Val Gln Pro Ala Ala Ala Pro Asp Phe Ser Phe Ser Lys Glu Gln Arg
 385 390 395 400
 Ser Gly Trp His Lys Gly Gln Leu Ser Asn Gly Glu Pro Gly Leu Ala
 405 410 415
 Arg Trp Asp Arg Ala Ser Glu Val Arg Lys Met Gly Glu Gly Gln Ala
 420 425 430
 Glu Ala Arg Pro Ala
 435

<210> 5

<211> 4174

<212> DNA

<213> Homo sapiens

<220>

<223> Partial DNA sequence for human myosin related
protein variant 1 (hMRP1)

<400> 5

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ttccagcaga	aacggaacta	tttccagagg	atggggcagc	cacagatcac	agtgaggacg	240
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<210> 6
 <211> 786
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Partial amino acid sequence of human myosin
 related protein variant 2 (hMRP2)

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 35 40 45
 Ser Pro Ser Pro Gly Lys Gly Pro Pro Pro Ala Val Ala Pro Arg Pro
 50 55 60
 Lys Ala Pro Leu Gln Leu Gly Pro Ser Ser Ser Ile Lys Glu Lys Gln
 65 70 75 80
 Gly Pro Leu Leu Asp Leu Phe Gly Gln Lys Leu Pro Ile Ala His Thr
 85 90 95
 Pro Pro Pro Pro Pro Ala Pro Pro Leu Pro Leu Pro Glu Asp Pro Gly
 100 105 110
 Thr Leu Ser Ala Glu Arg Arg Cys Leu Thr Gln Pro Val Glu Asp Gln
 115 120 125
 Gly Val Ser Thr Gln Leu Leu Ala Pro Ser Gly Ser Val Cys Phe Ser
 130 135 140
 Tyr Thr Gly Thr Pro Trp Lys Leu Phe Leu Arg Lys Glu Val Phe Tyr
 145 150 155 160
 Pro Arg Glu Asn Phe Ser His Pro Tyr Tyr Leu Arg Leu Leu Cys Glu
 165 170 175
 Gln Ile Leu Arg Asp Thr Phe Ser Glu Ser Cys Ile Arg Ile Ser Gln
 180 185 190
 Asn Glu Arg Arg Lys Met Lys Asp Leu Leu Gly Gly Leu Glu Val Asp
 195 200 205
 Leu Asp Ser Leu Thr Thr Thr Glu Asp Ser Val Lys Lys Arg Ile Val
 210 215 220
 Val Ala Ala Arg Asp Asn Trp Ala Asn Tyr Phe Ser Arg Phe Phe Pro
 225 230 235 240
 Val Ser Gly Glu Ser Gly Ser Asp Val Gln Leu Leu Ala Val Ser His
 245 250 255
 Arg Gly Leu Arg Leu Leu Lys Val Thr Gln Gly Pro Gly Leu Arg Pro
 260 265 270

Asp Gln Leu Lys Ile Leu Cys Ser Tyr Ser Phe Ala Glu Val Leu Gly
 275 280 285
 Val Glu Cys Arg Gly Gly Ser Thr Leu Glu Leu Ser Leu Lys Ser Glu
 290 295 300
 Gln Leu Val Leu His Thr Ala Arg Ala Arg Ala Ile Glu Ala Leu Val
 305 310 315 320
 Glu Leu Phe Leu Asn Glu Leu Lys Lys Asp Ser Gly Tyr Val Ile Ala
 325 330 335
 Leu Arg Ser Tyr Ile Thr Asp Asn Cys Ser Leu Leu Ser Phe His Arg
 340 345 350
 Gly Asp Leu Ile Lys Leu Leu Pro Val Ala Thr Leu Glu Pro Gly Trp
 355 360 365
 Gln Phe Gly Ser Ala Gly Gly Arg Ser Gly Leu Phe Pro Ala Asp Ile
 370 375 380
 Val Gln Pro Ala Ala Ala Pro Asp Phe Ser Phe Ser Lys Glu Gln Arg
 385 390 395 400
 Ser Gly Trp His Lys Gly Gln Leu Ser Asn Gly Glu Pro Gly Leu Ala
 405 410 415
 Arg Trp Asp Arg Ala Ser Glu Arg Pro Ala His Pro Trp Ser Gln Ala
 420 425 430
 His Ser Asp Asp Ser Glu Ala Thr Ser Leu Ser Ser Val Ala Tyr Ala
 435 440 445
 Phe Leu Pro Asp Ser His Ser Tyr Thr Met Gln Glu Phe Ala Arg Arg
 450 455 460
 Tyr Phe Arg Arg Ser Gln Ala Leu Leu Gly Gln Thr Asp Gly Gly Ala
 465 470 475 480
 Ala Gly Lys Asp Thr Asp Ser Leu Val Gln Tyr Thr Lys Ala Pro Ile
 485 490 495
 Gln Glu Ser Leu Leu Ser Leu Ser Asp Asp Val Ser Lys Leu Ala Val
 500 505 510
 Ala Ser Phe Leu Ala Leu Met Arg Phe Met Gly Asp Gln Ser Lys Pro
 515 520 525
 Arg Gly Lys Asp Glu Met Asp Leu Leu Tyr Glu Leu Leu Lys Leu Cys
 530 535 540
 Gln Gln Glu Lys Leu Arg Asp Glu Ile Tyr Cys Gln Val Ile Lys Gln
 545 550 555 560
 Val Thr Gly His Pro Arg Pro Glu His Cys Thr Arg Gly Trp Ser Phe
 565 570 575
 Leu Ser Leu Leu Thr Gly Phe Phe Pro Pro Ser Thr Arg Leu Met Pro
 580 585 590
 Tyr Leu Thr Lys Phe Leu Gln Asp Ser Gly Pro Ser Gln Glu Leu Ala

595

600

605

Arg Ser Ser Gln Glu His Leu Gln Arg Thr Val Lys Tyr Gly Gly Arg
610 615 620

Arg Arg Met Pro Pro Pro Gly Glu Met Lys Ala Phe Leu Lys Gly Gln
625 630 635 640

Ala Ile Arg Leu Leu Leu Ile His Leu Pro Gly Gly Val Asp Tyr Arg
645 650 655

Thr Asn Ile Gln Thr Phe Thr Val Ala Ala Glu Val Gln Glu Glu Leu
660 665 670

Cys Arg Gln Met Gly Ile Thr Glu Pro Gln Glu Val Gln Glu Phe Ala
675 680 685

Leu Phe Leu Ile Lys Glu Lys Ser Gln Leu Val Arg Pro Leu Gln Pro
690 695 700

Ala Glu Tyr Leu Asn Ser Val Val Val Asp Gln Asp Val Ser Leu His
705 710 715 720

Ser Gly Gly Ser Thr Gly Arg Pro His Cys Thr Ser Ile Thr Pro Pro
725 730 735

Thr Ser Ala Pro Thr Thr Ala Arg Cys Cys Gly Thr Thr Phe Arg Gly
740 745 750

Ser Cys Gln Ser Ala Pro Arg Gln Thr Arg Ser Ser Pro Gly Trp Pro
755 760 765

Pro Cys Ser Thr Ser Ala Arg Pro Thr Gly Ile Pro Pro Gln Gly Arg
770 775 780

Thr Cys
785

<210> 7

<211> 3780

<212> DNA

<213> Homo sapiens

<220>

<223> Partial DNA sequence for human myosin related
protein variant 2 (hMRP2)

<400> 7

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acagctacac	catgcaggaa	ttcgcccggc	gttacttccg	gaggtcccag	gccttgcctg	1980
gccagactga	tggagggtgcc	gcaggaaagg	acacggacag	cctgggtgcag	tacaccaagg	2040
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gatccccacc	cgaccccgag	ctccgcccag	gccccacatt	agcacaagcc	caggcatggg	3720
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<210> 8
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Signature
sequence 1 conserved between mouse and human MRP
genes, consensus peptides

<400> 8
Pro Trp Lys Leu Phe Leu Arg Lys Glu Val Phe Tyr Pro Arg Glu Asn
1 5 10 15
Phe Ser His Pro Tyr
20

<210> 9
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Signature
sequence 2 conserved between mouse and human MRP
genes, consensus peptides

<400> 9
Lys Lys Arg Ile Val Val Ala Ala Arg Asp Asn Trp Ala Asn Tyr Phe
1 5 10 15
Ser Arg

<210> 10
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Signature
sequence 3 conserved between mouse and human MRP
genes, consensus peptides

<400> 10
Lys Asp Ser Gly Tyr Val Ile Ala Leu Arg Ser Tyr Ile Thr Asp
1 5 10 15

<210> 11
 <211> 18
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Signature
 sequence 4 conserved between mouse and human MRP
 genes, consensus peptides

<400> 11
 Leu Glu Pro Gly Trp Gln Phe Gly Ser Ala Gly Gly Arg Ser Gly Leu
 1 5 10 15

Phe Pro

<210> 12
 <211> 407
 <212> PRT
 <213> Mus sp.

<220>
 <223> partial amino acid sequence for mouse myosin
 related protein (mMRP)

<400> 12
 Met Tyr Gln Ser Arg Pro Gly Pro Val Ala Val Pro Val Gln Pro Thr
 1 5 10 15

Arg Pro Ile Lys Thr Phe Gln Lys Lys Asn Asp Pro Lys Asp Glu Ala
 20 25 30

Leu Ala Lys Leu Gly Ile Asn Gly Val His Leu Pro Leu Ser Thr Ser
 35 40 45

Pro Asn Gln Gly Lys Ser Ser Pro Pro Ala Val Val Pro Arg Pro Lys
 50 55 60

Ala Arg Pro Arg Leu Glu Pro Ser Leu Ser Ile Gln Glu Lys Gln Gly
 65 70 75 80

Pro Leu Arg Asp Leu Phe Gly Pro Cys Ser Pro Asn Pro Pro Thr Ala
 85 90 95

Pro Ala Pro Pro Pro Pro Pro Ala Leu Pro Pro Pro Leu Ser Gly Glu
 100 105 110

Pro Lys Thr Pro Ser Val Glu Ser His Ala Leu Thr Glu Pro Met Glu
 115 120 125

Asp Lys Asn Ile Ser Thr Lys Leu Leu Val Pro Ser Gly Ser Val Cys
 130 135 140

Phe Ser Tyr Ala Asn Ala Pro Trp Lys Leu Phe Leu Arg Lys Glu Val
 145 150 155 160

Phe Tyr Pro Arg Glu Asn Phe Ser His Pro Tyr Cys Leu Ser Leu Leu
 165 170 175

Cys Gln Gln Ile Leu Arg Asp Thr Phe Thr Glu Ser Cys Thr Arg Ile
 180 185 190

Ser Gln Asp Glu Arg His Lys Met Lys Gly Leu Leu Gly Asp Leu Glu
 195 200 205

Val Ser Leu Glu Thr Leu Asp Ile Val Glu Asp Ser Ile Lys Lys Arg
 210 215 220

Ile Val Val Ala Ala Arg Asp Asn Trp Ala Asn Tyr Phe Ser Arg Ile
 225 230 235 240

Phe Pro Val Ser Gly Glu Ser Gly Ser Asp Val Gln Leu Leu Gly Val
 245 250 255

Ser His Arg Gly Leu Arg Leu Leu Lys Val Thr Gln Ser Pro Ser Phe
 260 265 270

His Leu Asp Gln Leu Lys Thr Leu Cys Ser Tyr Ser Tyr Ala Glu Val
 275 280 285

Leu Thr Val Gln Cys Arg Gly Arg Ser Thr Leu Glu Leu Ser Leu Lys
 290 295 300

Asn Glu Gln Leu Ile Leu His Thr Ala Trp Ala Arg Ala Ile Lys Ala
 305 310 315 320

Met Val Asp Leu Phe Leu Ser Glu Leu Arg Lys Asp Ser Gly Tyr Val
 325 330 335

Ile Ala Leu Arg Ser Tyr Ile Thr Asp Asp Asn Ser Leu Leu Ser Phe
 340 345 350

His Arg Gly Asp Leu Ile Arg Leu Leu Pro Val Thr Ala Leu Glu Pro
 355 360 365

Gly Trp Gln Phe Gly Ser Ala Gly Gly Arg Ser Gly Leu Phe Pro Asp
 370 375 380

Asp Val Val Gln Pro Ala Ala Ala Pro Asp Leu Ser Phe Ser Leu Gly
 385 390 395 400

Lys Arg Asn Ser Trp Gln Arg
 405

<210> 13

<211> 405

<212> PRT

<213> Homo sapiens

<220>

<223> Partial amino acid sequence for human myosin
 related protein variant 1 (hMRP1)

<400> 13

Met Tyr Gln Ser Arg Pro Gly Pro Val Pro Val Pro Val Gln Pro Ser
 1 5 10 15

Arg Pro Pro Lys Ala Phe Leu Arg Lys Ile Asp Pro Lys Asp Glu Ala
 20 25 30

Leu Ala Lys Leu Gly Ile Asn Gly Ala His Ser Ser Pro Pro Met Leu
 35 40 45
 Ser Pro Ser Pro Gly Lys Gly Pro Pro Pro Ala Val Ala Pro Arg Pro
 50 55 60
 Lys Ala Pro Leu Gln Leu Gly Pro Ser Ser Ser Ile Lys Glu Lys Gln
 65 70 75 80
 Gly Pro Leu Leu Asp Leu Phe Gly Gln Lys Leu Pro Ile Ala His Thr
 85 90 95
 Pro Pro Pro Pro Pro Ala Pro Pro Leu Pro Leu Pro Glu Asp Pro Gly
 100 105 110
 Thr Leu Ser Ala Glu Arg Arg Cys Leu Thr Gln Pro Val Glu Asp Gln
 115 120 125
 Gly Val Ser Thr Gln Leu Leu Ala Pro Ser Gly Ser Val Cys Phe Ser
 130 135 140
 Tyr Thr Gly Thr Pro Trp Lys Leu Phe Leu Arg Lys Glu Val Phe Tyr
 145 150 155 160
 Pro Arg Glu Asn Phe Ser His Pro Tyr Tyr Leu Arg Leu Leu Cys Glu
 165 170 175
 Gln Ile Leu Arg Asp Thr Phe Ser Glu Ser Cys Ile Arg Ile Ser Gln
 180 185 190
 Asn Glu Arg Arg Lys Met Lys Asp Leu Leu Gly Gly Leu Glu Val Asp
 195 200 205
 Leu Asp Ser Leu Thr Thr Thr Glu Asp Ser Val Lys Lys Arg Ile Val
 210 215 220
 Val Ala Ala Arg Asp Asn Trp Ala Asn Tyr Phe Ser Arg Phe Phe Pro
 225 230 235 240
 Val Ser Gly Glu Ser Gly Ser Asp Val Gln Leu Leu Ala Val Ser His
 245 250 255
 Arg Gly Leu Arg Leu Leu Lys Val Thr Gln Gly Pro Gly Leu Arg Pro
 260 265 270
 Asp Gln Leu Lys Ile Leu Cys Ser Tyr Ser Phe Ala Glu Val Leu Gly
 275 280 285
 Val Glu Cys Arg Gly Gly Ser Thr Leu Glu Leu Ser Leu Lys Ser Glu
 290 295 300
 Gln Leu Val Leu His Thr Ala Arg Ala Arg Ala Ile Glu Ala Leu Val
 305 310 315 320
 Glu Leu Phe Leu Asn Glu Leu Lys Lys Asp Ser Gly Tyr Val Ile Ala
 325 330 335
 Leu Arg Ser Tyr Ile Thr Asp Asn Cys Ser Leu Leu Ser Phe His Arg
 340 345 350

Gly Asp Leu Ile Lys Leu Leu Pro Val Ala Thr Leu Glu Pro Gly Trp
 355 360 365

Gln Phe Gly Ser Ala Gly Gly Arg Ser Gly Leu Phe Pro Ala Asp Ile
 370 375 380

Val Gln Pro Ala Ala Ala Pro Asp Phe Ser Phe Ser Lys Glu Gln Arg
 385 390 395 400

Ser Gly Trp His Lys
 405

<210> 14
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Consensus
 Peptide

<400> 14
 Met Tyr Gln Ser Arg Pro Gly Pro Val
 1 5

<210> 15
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Consensus
 Peptide

<400> 15
 Val Pro Val Gln
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<210> 16
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Consensus
 Peptide

<400> 16
 Asp Pro Lys Asp Glu Ala Leu Ala Lys Leu Gly Ile Asn Gly
 1 5 10

<210> 17
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 17
Pro Pro Ala Val
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<210> 18
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 18
Pro Arg Pro Lys Ala
1 5

<210> 19
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 19
Glu Lys Gln Gly Pro Leu
1 5

<210> 20
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 20
Asp Leu Phe Gly
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<210> 21
<211> 6
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 21
Pro Pro Pro Pro Pro Ala
1 5

<210> 22
<211> 9
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 22
Pro Ser Gly Ser Val Cys Phe Ser Tyr
1 5

<210> 23
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 23
Gln Ile Leu Arg Asp Thr Phe
1 5

<210> 24
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 24
Arg Ile Ser Gln
1

<210> 25
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 25
Phe Pro Val Ser Gly Glu Ser Gly Ser Asp Val Gln Leu Leu
1 5 10

<210> 26
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 26
Val Ser His Arg Gly Leu Arg Leu Leu Lys Val Thr Gln
1 5 10

<210> 27
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 27
Asp Gln Leu Lys
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<210> 28
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 28
Leu Cys Ser Tyr Ser
1 5

<210> 29
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 29
Ala Glu Val Leu
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<210> 30
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 30
Ser Thr Leu Glu Leu Ser Leu Lys
1 5

<210> 31
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 31
Leu His Thr Ala
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<210> 32
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 32
Ala Arg Ala Ile
1

<210> 33
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 33
Ser Leu Leu Ser Phe His Arg Gly Asp Leu Ile
1 5 10

<210> 34
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 34
Leu Leu Pro Val
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<210> 35
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
Peptide

<400> 35
Val Gln Pro Ala Ala Ala Pro Asp
1 5